



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/582,628

04/04/2007

Yasuhiro Shindo

Q110647

1973

23373 7590 10/06/2010
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

FINK, BRIEANN R

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

10/06/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

sughrue@sughrue.com
PPROCESSING@SUGHRUE.COM
USPTO@SUGHRUE.COM

Office Action Summary	Application No. 10/582,628	Applicant(s) SHINDO ET AL.	
	Examiner Brieann R. Fink	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,16,17 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) 23-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,16,17 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on August 30, 2010 has been entered.

2. Claim 1 has been amended. Claim 26 has been added. Claims 1-2, 4-6, 16-17, and 26 are currently pending and under examination.

3. The rejection of claims 1-2, 4, and 16 under 35 U.S.C. 102(b) as being anticipated by *Kinsho* (US 2003/0125479) is withdrawn.

4. The texts of those sections of Title 35 U.S. Code are not included in this section and can be found in a prior Office action.

Claim Rejections - 35 USC § 103

5. Claims 1-2, 4-6, 16-17 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Furuta* (US 2003/0220444).

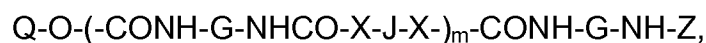
Furuta teaches a water-dispersed slurry coating, comprising: (A) a particulate comprising (a1) a resin having an active hydrogen; (B) a reactive surfactant having at least one of an optionally blocked isocyanate group and an epoxy group; and (M) an aqueous medium in which (A) and

Art Unit: 1796

(B) are contained (p. 1, [0010]). The surfactant (B) is further taught as comprising a hydrophobic moiety and a hydrophilic moiety (p. 1, [0013]).

Further, *Furuta* teaches the surfactant (B) as a urethane resin having at least one of an optionally blocked isocyanate group and an epoxy group comprising: (b3) an addition reaction product of (b1) a monohydric phenol or a monohydric aromatic alcohol, at least one of (b2) a vinyl monomer having an optionally blocked isocyanate group and (b2') a vinyl monomer having an epoxy group and may be used in combination with (b9) a vinyl monomer, such as styrene, or an alkylene oxide adduct of the addition reaction product; (b4) an organic diisocyanate; and (b5) at least one of a diol and a diamine each having a polyoxyalkylene chain; and optionally a chain terminating agent (p. 2, [0028]). *Furuta* further teaches the chain terminating agent to include compounds such as ethanol, propanol, and butanol (p. 4, [0069]), which are the same as the blocking agents of the instant invention (see instant specification, p. 10, I. 2).

Furuta teaches a preferable urethane resin as



where Q represents a residue of (b3), G represents a residue of (b4), X represents O or NH, J represents a residue of (b5), Z represents a group represented by $-\text{CO-Y}$, wherein Y is $-\text{OR}'$, wherein R' is a monohydric alcohol residue, which is the same as the alcohol blocking agent of the instant invention, and m is an integer between 1 and 500.

Q is a residue of (b3), which as described above can include (b9) vinyl monomers with neither isocyanate group nor epoxy group, as needed, those of which include aliphatic vinyl hydrocarbon, an alicyclic vinyl hydrocarbon, and an aromatic vinyl hydrocarbon (p. 2, [0026] and [0030]). These are the same as applicants' (b2) of the instant invention.

The reactive surfactant (B) taught by *Furuta et al.* falls within that claimed by the instant invention; however, the integer m of 1-500 is much larger than the claimed range of 1-20 and the ranges are overlapping. It has been held that overlapping ranges are sufficient to establish *prima facie* obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected from the overlapping portion of the range taught by the reference because overlapping ranges have been held to establish *prima facie* obviousness.

As to claim 2, *Furuta* teaches the slurry coating to preferably contain a curing agent (a2) (p. 6, [0098]).

As to claim 4, *Furuta* teaches the hydrophobic moiety as having an aromatic ring-containing hydrocarbon group having 6 to 10 carbon atoms (p. 1, [0013]).

As to claim 5, *Furuta* teaches the hydrophilic group of the surfactant as an oxyethylene unit, such as polyoxyethylene moiety, such that the content of oxyethylene unit is from 20-90% by weight of the surfactant (B) (p. 1, [0016]-[0017]).

Art Unit: 1796

As to claim 6, *Furuta* teaches all of the surfactants in Synthesis Examples 1-8 to have an average molecular weight of between 5,800 and 33,000 (p. 14-15); however, fails to teach the weight average molecular weight of the polyoxyethylene chain. The components of the surfactant and reaction conditions to produce the surfactant of *Furuta* appear to be the same as that of the instant invention, therefore, the weight average molecular weight of the polyoxyethylene chain of *Furuta* is inherently the same as that required by the instant invention.

As to claim 16, *Furuta* teaches that the particulate (A0) can be obtained by a process in which a solvent solution of the resin (a1) is disperse into water and desolvation of the solvent is carried out (p. 6, [0099]).

As to claim 17, *Furuta* teaches applying the dispersion to an object and baking the coating to form a film on the object (p. 13, [0239]).

As to claim 26, *Furuta* teaches the monohydric phenol or aromatic alcohol preferably as cumyl phenol and phenol (p. 3, [0032]).

Response to Arguments

6. Applicant's arguments filed August 30, 2010 have been fully considered but they are not persuasive.

Applicants argue that Q (of the instant invention) does not include any of the optionally blocked isocyanate group and epoxy, which is required by *Furuta*.

Furuta teaches (b3), which represents Q in the formula, as an addition reaction product of (b1) a monohydric phenol or a monohydric aromatic alcohol, at least one of (b2) a vinyl monomer having an optionally blocked isocyanate group and (b2') a vinyl monomer having an epoxy group **and may be used in combination with (b9) a vinyl monomer**, or an alkylene oxide adduct of the addition reaction product. (b9) vinyl monomers have neither isocyanate group nor epoxy group, as needed, and include aliphatic vinyl hydrocarbon, an alicyclic vinyl hydrocarbon, and an aromatic vinyl hydrocarbon (p. 2, [0026] and [0030]). These are the same as applicants' (b2) of the instant invention.

The instant invention claims "...the reactive surfactant (B) is a urethane resin **comprising**: (b3)...". The comprising claim language allows for the inclusion of (b2) a vinyl monomer having an optionally blocked isocyanate group and (b2') a vinyl monomer having an epoxy group of *Furuta* so long as at least vinyl monomers having neither isocyanate group nor epoxy group are present. Further, the definition of Q in instant claim 1 does not prevent the inclusion of these monomers.

Applicants argue that *Furuta* teaches one of an isocyanate group, a blocked isocyanate group, and an epoxy group in the hydrophobic moiety, whereas the instant invention requires this group to be present in the hydrophilic group.

The examiner agrees that *Furuta* teaches this group in the hydrophobic moiety; however, *Furuta* also teaches this group in the hydrophilic moiety as $-G-NH-Z$, from the formula above. Z represents the group $-CO-Y$, wherein Y is $-OR'$, wherein R' is a monohydric alcohol residue, which is the same as the alcohol blocking agent of the instant invention. This results in a blocked isocyanate group, $-G-NH-CO-O-R'$, $-NH-CO-$ being the isocyanate group.

Furuta teaches one of an isocyanate group, a blocked isocyanate group, and an epoxy group in the hydrophobic moiety in the hydrophobic moiety AND teaches a blocked isocyanate group in the hydrophilic moiety of the surfactant. This reads on the instant invention as the instant claims do not prevent the presence of these groups in the hydrophobic moiety of the surfactant, they claims only require that they are at least present in the hydrophilic moiety of the surfactant.

As to the comparison of applicants Examples 1-7 with Examples 8-9, they are not directly comparable. Firstly, Examples 8-9 do not comprise the (b9) vinyl monomers, as is being suggested in the rejection above. Further, Synthesis 1 substitutes styrene for the ethanol-blocked 3-isopropenyl- α,α -dimethylbenzylisocyanate of Comparative Example 2. *Furuta* at least teaches the surfactant which would have BOTH styrene and ethanol-blocked 3-isopropenyl- α,α -dimethylbenzylisocyanate. Also, Synthesis 1 uses a block agent, specifically MEK oxime, wherein *Furuta*

Art Unit: 1796

teaches at least the inclusion of an alcohol blocking agent. Therefore, the examples are not comparable with the closest prior art.

In order to show possible unexpected results, the applicants should carry out, for example, Synthesis 1 using an alcohol as the blocking agent, and prepare the surfactant with AND without ethanol-blocked 3-isopropenyl- α,α -dimethylbenzylisocyanate. The presence or lack thereof of ethanol-blocked 3-isopropenyl- α,α -dimethylbenzylisocyanate should be the ONLY difference between the two surfactants in order to properly compare the instant invention with *Furuta*.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Briann R. Fink whose telephone number is (571)270-7344. The examiner can normally be reached on Monday through Friday, 7:00 AM to 4:30 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton I. Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Milton I. Cano/
Supervisory Patent Examiner, Art Unit 1796

/Brieann R Fink/
Examiner, Art Unit 1796